

CHAPTER 8 – ACRONYMS AND GLOSSARY

8.1 ACRONYMS

2D	2-Dimensional
3D	3-Dimensional
AACL	Acceptable Ambient Concentration Levels
ACEC	Areas of Critical Environmental Concern
ANC	Acid Neutralizing Capacity
ANS	Artificial Nesting Structures
AO	Authorizing Officer
APD	Application for Permit to Drill
AQRV	Air Quality Related Values
ARPA	Archaeological Resources Protection Act
AUM	Animal Unit Months
bcf	Billion Cubic Feet
BLM	Bureau of Land Management
BMP	Best Management Practice
BOP	Blowout Preventer
CDOW	Colorado Division of Wildlife
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CIAA	Cumulative Impact Analysis Area
CO	Carbon Monoxide
CWA	Clean Water Act
dB	Decibel
dBA	A-Weighted Decibel

DOGM	Division of Oil, Gas and Mining
DOI	Department of the Interior
EA	Environmental Assessment
EHS	Extremely Hazardous Substances
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPM	Environmental Protection Measures
EUR	Estimated Ultimate Recovery
FEMA	Federal Emergency Management Agency
FLAG	Federal Land Managers' Air Quality Related Values Workgroup
FLM	Field Land Manager
FLPMA	Federal Land Policy and Management Act
H ₂ S	Hydrogen Sulfide
HAP	Hazardous Air Pollutant
HUD	Department of Housing and Urban Development
KOP	Key Observation Point
KOSLA	Known Oil Shale Leasing Area
L _{dn}	Day-Night Sound Level
L _{eq}	Equivalent Sound Level
LOP	Life of Project
mg/l	Milligrams per liter
MSA	Management of the Situation Analysis
MSDS	Material Safety Data Sheets
MSO	Mexican Spotted Owl
MW	megawatts
NAAQS	National Ambient Air Quality Standards
NaCl	Sodium Chloride
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act

NO ₂	Nitrogen Dioxide
NOI	Notice of Intent
NOS	Notice of Staking
NO _x	Nitrogen Oxide
NPS	National Park Service
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
NSR	New Source Review
O ₃	Ozone
OHV	Off-Highway Vehicles
P&A	Plugged and Abandoned
PA	Programmatic Agreement
Pb	Lead
PCI	Per Capita Income
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
RDG	Resource Development Group
RFD	Reasonably Foreseeable Development
RMP	Resource Management Plan
ROD	Record of Decision
ROS	Recreational Opportunity Spectrum
ROW	Right of Way
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Officer
SITLA	School and Institutional Trust Lands Administration
SO ₂	Sulfur Dioxide
STSA	Special Tar Sand Area
SUPO	Surface Use Plan of Operations

SUWA	Southern Utah Wilderness Alliance
Sw	Water Saturation
tcf	trillion cubic feet
TD	Total Depth
TDS	Total Dissolved Solids
UDAQ	Utah Department of Air Quality
UDEQ	Utah Department of Environmental Quality
UDWR	Utah Division of Wildlife Resources
UPDES	Utah Pollutant Discharge Elimination System
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWC	Utah Wilderness Coalition
VOC	Volatile Organic Compound
VRM	Visual Resource Management
WIA	Wilderness Inventory Area
WRCC	Western Regional Climate Center
WSA	Wilderness Study Area
φ	porosity

8.2 GLOSSARY

Acre-feet – The volume of liquid or solid required to cover one acre to a depth of one foot, or 43,560 cubic feet; measure for volumes of water, reservoir rock, etc.

Active Raptor Nest – A nest documented as occupied by a raptor within the 3-year period preceding proposed construction.

Adsorb – A process by which molecules are taken up on the surface of a solid by chemical or physical action. Large amounts of gases, for example, may be adsorbed on the surface of a porous material such as charcoal.

Ad valorem – A tax on items that is imposed at a rate percent of value.

Affected Environment – The natural, physical, and human-related environment that is sensitive to changes due to proposed actions; the environment under the administration of a land management agency.

Agency – The land management agency, in this case the BLM.

Air Dispersion Modeling – A complex computer model that calculates ambient concentrations of air pollutants.

Allotment – A unit of land suitable and available for livestock grazing that is managed as one grazing unit.

Alluvial – Deposited by a stream.

Alluvial Fan – A fan-shaped deposit of unsorted stream sand and gravel located where an ephemeral stream issues from a relatively steep mountain valley on to a relatively flat plain.

Alluvial Valley – A valley containing stream-deposited silt, sand, and gravel.

Alluvium – Unconsolidated or poorly consolidated gravel sands and clays, deposited by streams and rivers on riverbeds, floodplains, and alluvial fans.

Ambient – The environment as it exists at the point of measurement and against which changes or impacts are measured.

Ambient Concentration – The mass of a pollutant in a given volume of air. It is typically measured as micrograms of pollutant per cubic meter of air.

Amine Unit – A facility in which "sour" natural gas is contacted with amine solutions to remove hydrogen sulfide and carbon dioxide (thus "sweetening"). The amine solutions react with the unwanted gas constituents to form other compounds which can then be removed.

Ancillary Facility – Additional support structures required to develop the mineral resource. In the case of CBD development, this consists of gas compressor facilities, disposal wells, roads, collection pipelines, and electric transmission lines.

Anhydrite – An evaporite mineral composed of calcium sulfate and found in sedimentary rocks associated with gypsum.

Animal Month – For a cow/calf operations, it is the amount of forage consumed by a 1,000 pound cow and calf (less than 6 months of age) over a one month period. It is approximately 1,050 pounds of forage.

Animal Unit Months (AUMs) – For the BLM allotments, it is the amount of forage consumed by a 1,000 pound cow over a one month period, approximately 800 pounds of forage. An animal unit month is then multiplied by 1.32 for a cow/calf operation and is equivalent to an animal month for purposes of this document.

Anion – A negative ion, which in electrolysis, travels to the anode and is there discharged.

Annulus – The space between the well casing and the boundary of the hole.

Antiquities – A general term for archaeological or paleontological resources which are at least 100 years of age and which tangibly represent or have the potential to yield information on historical or prehistoric cultures, or extinct plants and animals.

Aquatic Resources – Biological resources (plants, animals, and other life forms) present in or dependent on streams, lakes, and other surface water.

Aquifer – A body of rock that is sufficiently permeable to conduct groundwater and to yield economically significant quantities of water to wells and springs.

Assemblage – A group of rocks grouped together by age or similar origin.

Authorizing Officer – Person designated by the Agency as being in the position to speak for and commit the agency to action.

Avoidance Area – An environmentally sensitive area designated by the Agency. Authorizations would be granted only in cases where there is a prevailing need and no practical alternative exists, and then only with provisions to protect the sensitive resources.

Azimuth – Horizontal direction expressed as the angular distance between the direction of a fixed point and the direction of the object.

Background – The viewing area of a distance zone that lies beyond the foreground-middleground. Usually from a minimum of 3 to 5 miles to a maximum of about 15 miles from a travel route, use area, or other observer position. Atmospheric conditions in some areas may limit the maximum to about 8 miles or increase it beyond 15 miles.

Best Management Practices (BMP) – a practice or combination of practices determined by the state to be the most effective and practicable (including technological, economic and institutional considerations) means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.

Big Game – Large species of wildlife that are managed for hunting.

Biotic – Pertaining to life and living organisms.

Blow Out Prevention Equipment – A series of valves on the drill rig which can close down the well in the event that the drill bit penetrates extreme pressure zones.

Bond – Financial guarantee to ensure compliance with the Mineral Leasing Act, including complete and timely plugging of wells, reclamation of lands or adversely affected surface waters, payment of royalties, assessments or penalties.

Broadcast Seeding – Distribution of seed by a fan spreader or by hand spreading.

Canopy – The more-or-less continuous cover of branches and foliage formed collectively by the crown of adjacent trees and other woody growth.

Carbon Dioxide (CO₂) – A non-hydrocarbon, corrosive gas that occurs naturally in the gaseous phase in the natural gas reservoir, or is injected into the reservoir in connection with pressure maintenance, gas cycling, or other secondary or enhanced recovery projects.

CAS number – chemical abstract number tracking number.

Casing – (N) A steel pipe which maintains the opening of a drill hole. (V) The act of installing pipe within a well.

Catalyst – A substance that enables a chemical reaction to proceed at a usually faster rate or under different conditions than otherwise possible.

Cation – A positive ion, which in electrolysis, travels to the cathode and is discharged there.

Cavity Pump – A high pressure, low flow positive displacement pump.

Cement Bond Log – A geophysical log which confirms the continuous placement of cement within the annulus of the well, to isolate the formation of interest and to prevent commingling of different aquifers around the casing.

Central Processing Unit – A centralized site where gas compression occurs prior to transport in gas delivery lines.

Central Production Facility – All storage, separation, treating, dehydration, power supply, compression, pumping, metering, monitoring, flowline, and other equipment directly associated with gas wells.

Characteristic Landscape – The established landscape within an area being viewed. The term does not necessarily mean a naturalistic character, but may refer to features of the cultural landscape, such as a farming community, an urban landscape, or other landscape that has an identifiable character.

Class I, II Whitewater – Ranking of boating difficulty. Class I is Easy. Fast moving water with riffles and small waves. Few obstructions. Risk to swimmers is slight; self-rescue is easy. Class II is Novice. Simple rapids with wide channels which are evident without scouting. Occasional maneuvering may be required but obstructions are easily missed. Swimmers are seldom injured and group assistance is seldom needed.

Clean Air Act – Public Law 84-159, established July 14, 1955, and amended numerous times since. The Clean Air Act: establishes Federal standards for air pollutants emitted from stationary and mobile sources; authorizes states, tribes and local agencies to regulate polluting emissions; requires those agencies to improve air quality in areas of the country which do not meet Federal standards; and to prevent significant deterioration in areas where air quality is cleaner than those standards. The Act also requires that all Federal activities (either direct or authorized) comply with applicable local, state, tribal and Federal air quality laws, statutes, regulations, standards and implementation plans. In addition, before these activities can take place in non-attainment or maintenance areas, the Federal agencies must conduct a Conformity Analysis (and possible Determination) demonstrating the proposed activity will comply with all applicable air quality requirements.

Climatology – Science of climate and its causes.

Coalbed – A seam or stratum of coal parallel to the rock stratification.

CFR – Code of Federal Regulations, the compilation of federal regulations adopted by federal agencies through a rule-making process.

Colluvial – Consisting of a mixture of soil and angular fragments of rock which have accumulated at the foot and on slopes of mountainsides under the influence of gravity.

Colluvium – A mixture of soil and angular fragments of rock which have accumulated at the foot and on slopes of mountainsides under the influence of gravity.

Community (plant community) – An assembly of plants living together, reflecting no particular ecological status.

Community Types (vegetation) – A group of plants living in a specific region under relatively similar conditions.

Compressor – Equipment (electrically or diesel-driven) used to increase the pressure on the produced gas to move it into transmission lines or into storage.

Conglomerate – A sedimentary rock comprised of an unstratified mixture or stratified layers of cobbles, gravel, and sand.

Coniferous – Referring to a cone-bearing, usually evergreen, tree.

Coniferous Forest – A forest dominated by cone-bearing, usually evergreen, trees.

Contrast – The effect of a striking difference in the form, line, color, or texture of the landscape features within the area being viewed.

Criteria Pollutants – Air pollutants for which the EPA has established State and National Ambient Air Quality Standards. These include particulate matter (PM₁₀), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOC).

Critical Habitat – Sensitive use areas that are of limited abundance and/or possess unique qualities, thereby constituting irreplaceable, critically necessary habitat.

Crucial Habitat – Lands on which wildlife or plant species not federally listed as threatened or endangered depend for survival. No alternative suitable habitat is available because of some site limiting factor(s).

Cubic Foot – The volume of gas contained in one cubic foot of space at a standard pressure base of 14.7 psi and a standard temperature base of 60 degrees Fahrenheit.

Cultural Resources – The archaeological and historical remains of human occupation or use. Includes any manufactured objects, such as tools or buildings. May also include objects, sites, or geological/geographical locations significant to Native Americans.

Cultural Significance – Is embodied in those qualities of prehistoric or historic districts, sites, buildings, structures or objects that meet the National Register Criteria for Evaluation (36CFR60.4). The application of these criteria is explained in the National Register Bulletin 15, distributed by the National Park Service.

Cumulative Effects – As defined by 40 CFR 1508.7, cumulative effects are the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

dBA – The sound pressure levels in decibels measured with a frequency weighing network corresponding to the A-scale on a standard sound level meter. The A-scale tends to suppress lower frequencies, e.g., below 1,000 Hz.

Decibels (dBA) – Units for describing amplitude of sound frequencies to which the human ear is sensitive.

Deciduous – Trees or shrubs which lose their leaves each year during a cold or dry season.

Deciduous Forest – A forest characterized by trees and shrubs which lose their leaves each year during a cold or dry season.

Decommissioning – Generally, the removal of a facility or piece of equipment from service, or a change in status from active to inactive.

Demographic – Pertaining to the study of human population characteristics including size, growth rates, density, distribution, migration, birth rates, and mortality rates.

Desorb – To restore an adsorbed substance.

Direct Effects – As defined by 40 CFR 1508.9, these are effects which are caused by the action and occur at the same time and place as the action. Synonymous with direct impacts.

Direct Impact Area – An area analyzed for the effects of an action that would occur at the same place in time.

Directional Drilling – The intentional deviation of a wellbore from vertical to reach subsurface areas off to one side from the drilling site.

Discharge – The volume of water flowing past a point per unit time, commonly expressed as cubic feet per second (cfs), gallons per minute (gpm), or million gallons per day (mgd).

Dispersed Recreation – A general term referring to recreation use outside the developed recreation sites. This includes activities such as scenic driving, hunting, hiking, OHV use, and biking.

Disposal Well – Any well used for the disposal of air, gas, water or other substance into any underground stratum.

Distance Zones – Areas of landscapes denoted by specified distances from the observer. Used as a frame of reference in which to discuss landscape characteristics or activities of man.

Background (bg) – Area located from 3-5 miles to infinity from viewer.

Middleground (mg) – Area located from 0.25-0.50 to 3-5 miles from the viewer.

Foreground (fg) – The detailed landscape found within 0 to 0.25-0.50 mile from the viewer.

Disturbance – An event that changes the local environment by removing organisms or opening up an area, facilitating colonization by new, often different, organisms.

Disturbed Area – Area where natural vegetation and soils have been removed or disrupted.

Diversity – The distribution and abundance of different plant and animal communities and species within the area covered by a Land and Resource Management Plan.

Drainage – Natural channel through which water flows some time of the year. Natural and artificial means for effecting discharge of water as by a system of surface and subsurface passages.

Drill Bit – The cutting device used to drill a well. It is typically made of hardened steel, and may have industrial grade diamond components.

Drilling Mud – The circulating fluid used to bring cuttings out of the well bore, cool the drill bit, provide hole stability and pressure control. Drilling mud includes a number of additives to maintain the mud at desired viscosities and weights. Some additives which may be used are caustic, toxic, or acidic.

Earthquake – Sudden movement of the earth's crust resulting from faulting, volcanism, or other mechanisms.

Ecosystem – An interacting system of organisms considered together with their environment for example, marsh, watershed, and stream ecosystems.

Ecotone – The boundary or transition zone between adjacent plant communities, often delineating different habitat types.

Effects – Environmental consequences as a result of a proposed or alternative action. Included are direct effects, which are caused by the action and occur at the same time and place, and indirect effects, which are caused by the action and are later in time or further removed in distance but which are still reasonably foreseeable. Also referred to as impacts.

Emission – Air pollution discharge into the atmosphere, usually specified by mass per unit time.

Endangered Species – Any species of animal or plant which is in danger of extinction throughout all or significant portions of its range and has been designated "endangered" in the Federal Register by the Secretary of the Interior. Disturbance of the habitat of endangered species is prohibited by the Endangered Species Act of 1973, as amended.

Endemic – Confined naturally to a particular geographic area. Often used in opposition to the word epidemic.

Environment – The aggregate of physical, biological, economic and social factors affecting organisms in an area.

Environmental Analysis – An analysis of alternative actions and their predictable environmental effects, including physical, biological, economic, and social consequences and their interactions; short- and long-term effects; direct, indirect, and cumulative effects.

Environmental Assessment (EA) – A concise public document which serves to (a) Briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a Finding of No Significant Impact; (b) Aid an agency's compliance with NEPA when no EIS is necessary; (c) Facilitate preparation of an EIS when necessary.

Environmental Impact Statement (EIS) – An analysis of alternative actions and their predictable environmental effects, including physical, biological, economic, and social consequences and their interactions; short- and long-term effects; direct, indirect, and cumulative effects.

Environmental Justice – Executive Order 12898 (February 11, 1994) mandates Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

Ephemeral Drainage – A drainage area or a stream that has no base flow. Water flows for a short time each year but only in direct response to rainfall or snowmelt events.

Erosion – Detachment or movement of soil or rock fragments by water, wind, ice, or gravity. Accelerated erosion is much more rapid than normal, natural or geologic erosion, primarily as a result of the influence of activities of man, animals, or natural catastrophes.

Escarpment – An inland cliff or steep slope, formed by the erosion of inclined strata of hard rocks, or possibly as a direct result of a fault.

Evaporation Pond – An industrial containment area designed to allow briny water to evaporate by using solar energy.

Exclusion Area – An area where no surface occupancy would be allowed. This stipulation would prevent well pads, roads, and/or ancillary facilities from being constructed in specific areas.

Exploration – The search for economic deposits of minerals, ore, and other materials through practices of geology, geochemistry, geophysics, drilling, and/or mapping.

Eyrie – A nesting and roosting area for raptors, typically at height and secluded (also Aeries).

Fault – A fracture in bedrock along which there has been vertical and/or horizontal movement caused by differential forces in the earth's crust.

Faulting – Relative displacement of adjacent bedrock along a fracture.

Fisheries – Streams and lakes used for fishing.

Fisheries Habitat – streams, lakes and reservoirs that support fish.

Flaring – The controlled ignition of natural gas at a well head.

Floodplain – That portion of a river valley, adjacent to the channel, which is built of recently deposited sediments and is covered with water when the river overflows its banks at flood stages.

Fluvial – Comprehensive term for river processes.

Footprint – The actual surface area physically disturbed by oil and gas operations and ancillary facilities.

Forage – Vegetation used for food by wildlife, particularly big game wildlife and domestic livestock.

Forb – A broad-leaved flowering plant.

Foreground-Middleground – The area visible from a travel route, use area, or other observer position to a distance of 3 to 5 miles. The outer boundary of this zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape, and vegetation is apparent only in pattern or outline.

Frac Fluids – A mixture of water, guar gel, sand and pH and bacterial control chemicals used in the development of a well for fluid extraction.

Fracturing – A method of stimulating well production by increasing the permeability of the producing formation. Fracture fluids which include propping agents such as sand or glass beads are pumped into the formations under extremely high hydraulic pressure. The propping agents facilitate the formation of channels to release water and gas into well.

Fugitive Dust – Airborne particles emitted from any source other than through a stack.

Game Species – Animals commonly hunted for food or sport.

Gas Venting – The release of gas into the atmosphere following well development and prior to successful installation of the collection pipeline system.

Geotechnical – A branch of engineering concerned with the engineering design aspects of slope stability, settlement, earth pressures, bearing capacity, seepage control, and erosion.

Glacial Outwash – The material deposited by streams flowing within a glacier, and by meltwaters during times of glacial advance and retreat.

Grade – A slope stated in terms of feet per mile or as feet per feet (percent); the content of precious metals per volume of rock (ounces per ton).

Ground Water – All subsurface water, especially that as distinct from surface water portion in the zone of saturation.

Habitat – The place or type of site where a plant or animal naturally or normally lives and grows. Includes all biotic, climatic, and soils conditions, or other environmental influences affecting living conditions.

Habitat Diversity – the distribution and abundance of different plant and animal communities and species within a specific area.

Habitat Fragmentation – The process by which habitats are increasingly subdivided into smaller units, resulting in their increased isolation as well as loss of total habitat area.

Habitat Type – The aggregate of all areas that support or can support the same primary vegetation at climax.

Herbaceous – The plant strata which contain soft, not woody, stemmed plants that die to the ground in winter.

High-value winter range – an area that provides for "intensive" use by one or more wildlife species that, due to relatively wide distribution, does not constitute critical values but which are highly important to high-interest wildlife

Historic Landscape – A type of historic district that is a geographic area, or the sites, buildings, structures, natural and cultural features, and objects within a defined geographic area, that together represent a defined historic or prehistoric theme and period. The definition of a historic landscape includes: (1) a significant theme (linkage or continuity) such as a particular economic activity or ethnic group, (2) definitions of those sites, buildings, structures, natural features, cultural landscape modifications, and objects (property types) which represent the theme, and (3) a cultural period or date range.

Hydrogen Sulfide (H₂S) – A flammable, poisonous, corrosive gas with an odor suggestive of rotten eggs, which can occur naturally in the gaseous phase in natural gas reservoirs.

Hydrologic Subarea – The contributing watershed to a specific reach of a river.

Hydrology – A science that deals with the properties, distribution, and circulation of surface and subsurface water.

Hydrostatic Testing – Testing of the integrity of a newly placed, but uncovered pipeline for leaks. The pipeline is filled with water and pressurized to operating pressures, and the pipeline is visually inspected.

Impoundment – The accumulation of any form of water in a reservoir or other storage area.

Indemnify – To secure against, or to provide compensation for incurred loss, hurt, or damage.

Indirect Effects – As defined by 40 CFR 1508.8, these are effects which are caused by the action but occur later in time or are removed in distance from the action, but are still reasonably foreseeable. Synonymous with indirect impacts.

Infiltration – The movement of water or some other liquid into the soil or rock through pores or other openings.

Infrastructure – The basic framework or underlying foundation of a community including road networks, electric and gas distribution, water and sanitation services, and facilities.

Intermittent Stream – A stream which flows only at certain times of the year when it receives water from alluvial ground water, springs or from some surface source such as melting snow in mountainous areas.

Ion – An atom or group of atoms that have an excess or a deficiency of electrons and is thus electrically charged. An ion may be formed in a gas or in a solution and is capable of carrying current through either medium.

Irretrievable – Applies to the loss of production, harvest, or use of natural resources. For example, some or all of the timber production from an area is lost irretrievably while an area is serving as a winter sports site. The production lost is irretrievable, but the action is not irreversible. If the use changes, it is possible to resume timber production.

Irreversible – Applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors that are renewable only over long time spans, such as soil productivity and aspen regeneration. Irreversible also includes loss of future options.

Key Observation Point (KOP) – Critical viewpoints that are usually along commonly traveled routes or at other likely observation points.

Landform – Any physical, recognizable form or feature of the Earth's surface, having a characteristic shape and produced by natural causes. Includes major features such as plains, plateaus, and mountains, and minor features, such as hills, valleys, slopes, canyons, arroyos, and alluvial fans.

Landscape Character – The arrangement of a particular landscape as formed by the variety and intensity of the landscape features as defined as the four basic elements (form, line, color, and texture). These factors give the area a distinctive quality that distinguishes it from its immediate surroundings.

Landslide – A perceptible downhill sliding or falling of a mass of soil and rock lubricated by moisture or snow.

Land Use – Land uses determined for a given area that establish the types of activities allowed (e.g., mining, agriculture, timber production, residential, industrial).

Lease – Any contract, profit-share arrangement, joint venture or other agreement issued or approved by the United States under a mineral leasing law that authorizes exploration for, extraction of or removal of oil or gas.

Lek – An area used by sage grouse for mating displays (strutting ground).

Lithic Scatter – Is a surface scatter of cultural artifacts and debris that consists entirely of lithic (i.e., stone) tools and chipped stone debris. This is a common prehistoric site type that is contrasted to a cultural material scatter, which contains other or additional artifact types such as pottery or bone artifacts, to a camp which contains habitation features, such as hearths, storage features or occupation features, or to other site types that contain different artifacts or features.

Loam – A mixture of sand, silt, and clay containing between 7 and 27 percent clay, 28 to 50 percent silt, and less than 50 percent sand.

Locus – Is a discrete place or physical location generally used in describing the qualities of a site. When the term is used in contrast to a site, it refers to a locality containing the traces of a brief, limited or transient cultural activity.

Long-Term Impacts – For the purpose of this EIS analysis, long-term effects generally last beyond the construction period.

LRMP – a program for the management of the National Forest's renewable resources. Each unit of the National Forest System is required by the National Forest Management Act to prepare a Land and Resource Management Plan every ten to fifteen years.

Macroinvertebrates – Aquatic invertebrate animals that live on or in the surface of the substrate of streams or lakes.

Manageability/Boundaries – one of the six roadless area characteristics and wilderness features; relates to the ability of the Forest Service to manage an area to meet size criteria and the roadless area characteristics and wilderness features of natural integrity, apparent naturalness, remoteness, solitude, and special features. Changes in the shape of an area influence how it can be managed, as many of the six elements may be compromised. To meet the requirements of size, an area must be at least 5,000 acres.

Management Area – an area composed of aggregate pieces of land (generally several to many analysis areas) to which a given management objective and prescriptions are applied.

Management Direction – a statement of multiple use and other goals and objectives, along with the associated management prescriptions and standards and guidelines to direct resource management.

Median – A value in an ordered set of values above and below which there are an equal number of other values.

Mesic – A habitat characterized by moderate moisture and temperature conditions and by a profusion of plant life.

Methane (CH₄) – The simplest hydrocarbon; natural gas is nearly pure methane.

Mitigate – To lessen the severity.

Mitigation – Actions to avoid, minimize, reduce, eliminate, or rectify the impact of a management practice.

Modified Mercalli Intensity Scale – A qualitative measurement scale describing the intensity (degree of shaking) felt by people, structures, and the ground. Intensities range from I (felt by few, if any, people) to XII (damage total).

Monitor – To systematically and repeatedly watch, observe or measure environmental conditions in order to track changes.

Monoculture – An area characterized by the vegetation consisting of a single species, e.g. a wheat field.

Mottled – Marked by different shaded spots.

National Ambient Air Quality Standards (NAAQS) – The allowable concentrations of air pollutants in the air specified by the Federal government. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public welfare from any unknown or expected adverse effects of air pollutants).

National Register of Historic Places – A list, maintained by the National Park Service, of areas which have been designated as being of historical significance.

Native Species – Plants that originated in the area in which they are found, i.e., they naturally occur in that area.

Natural Gas – Those hydrocarbons, other than oil and other than natural gas liquids separated from natural gas, that occur naturally in the gaseous phase in the reservoir and are produced and recovered at the wellhead in gaseous form. Natural gas includes coalbed methane gas.

NEPA – The National Environmental Policy Act of 1969. It is the national charter for protection of the environment. NEPA establishes policy, sets goals, and provides means for carrying out the policy. Regulations at 40 CFR 1500B1508 implement the act.

Nesting Substrate – The site on which a nest is placed such as a tree, cliff, or ground.

Non-emergency Workover Operations – workover operations to correct or reverse a gradual loss of production over time (loss of production of 20 percent or less over a 60-day period). Emergency workover operations are defined as downhole equipment failure problems or workover operations necessary to avoid shut-in of the well or to avoid an immediate safety or environmental problem. Loss of production greater than 20 percent within a 60-day period of time is indicative of pump failure and would be considered an emergency workover operation.

Noxious Weeds – An alien, introduced, or exotic undesirable species that is aggressive and overly-competitive with more desirable native species.

NTU – nephelometric turbidity units (*see* Turbidity).

One-hundred year, twenty four-hour storm event (100-year, 24-hour) – The maximum precipitation predicted to occur within any 24-hour period over a period of 100 years; a storm with a one percent probability of occurrence.

Ozone – A molecule containing three oxygen atoms (O₃) produced by passage of an electrical spark through air or oxygen (O₂).

Paleontology – The science which deals with the history and evolution of life on earth.

Particulate Matter – A particle of soil or liquid matter (e.g., soot, dust, aerosols, fumes and mist).

Passerine – A taxonomic order which includes perching birds and songbirds.

Peak Flow – The greatest flow attained during melting of winter snowpack or during a large precipitation event.

Pediment – An erosional surface of low relief, often covered with a veneer of gravel, forming at the foot of a mountain range.

Perennial – A plant whose life cycle lasts longer than two years. The tops of herbaceous perennials die down at the end of the growing season, buds, roots, and underground portions persist.

Perennial Stream – A stream or reach of a stream that flows throughout the year.

Permeability – The capacity of a soil or groundwater aquifer to transmit water.

Permeable – The property or capacity of a porous rock, sediment, or soil to transmit a liquid.

pH – The negative log₁₀ of the hydrogen ion activity in solution; a measure of acidity or basicity of a solution.

Physiographic – Pertaining to the genesis and evolution of landforms.

Pipe Stringing – Linking casing together to form a continuous string to the target formation. Twenty-foot lengths of casing are screwed together.

PM₁₀ – Airborne suspended particles with an aerodynamic diameter of 10 microns or less.

Porosity – The voids or openings in geological materials.

Potentiometric surface – A surface that represents the total head in an aquifer; it represents the height at which the water level stands in tightly cased wells that penetrate the aquifer.

Preservation – Use of an acid or base to stabilize the chemical speciation within a water quality sample.

Prevention of Significant Deterioration (PSD) – A regulatory program under the Clean Air Act (P.L. 84-159, as amended) to limit air quality degradation in areas currently achieving the National Ambient Air Quality Standards. The PSD program established air quality classes in which differing amounts of additional air pollution is allowed above a legally defined baseline level. Almost any additional air pollution would be considered significant in PSD Class I areas (certain large National Parks and Wilderness Areas in existence on August 7, 1977). PSD Class II areas allow that deterioration associated with moderate, well-controlled growth (most of the country). Although Class III areas would generally allow planned individual growth, no Class III areas have been established.

Produced Water – Formation water pumped during the development of a gas well.

Productivity – In reference to vegetation, productivity is the measure of live and dead accumulated plant materials.

Project Alternatives – Alternatives to the proposed Project developed through the NEPA process.

Range – Land producing native forage for animal consumption and lands that are revegetated naturally or artificially to provide forage cover that is managed like native vegetation, which are amenable to certain range management principles or practices.

Raptor – A bird of prey with sharp talons and strongly curved beaks which preys on living animals (e.g., eagles, hawks, falcons, and owls).

Rearing Habitat – The river or stream areas where juvenile salmonids must find food and shelter to survive for a period of time.

Reciprocating Pump – A pump with a plunger that moves up and down in the well bore. The plunger has a valve in it that opens on the downstroke and closes on the upstroke thus mechanically lifting water or gas in the well.

Recharge – Replenishment of the water supply in an aquifer through the outcrop or along fracture lines.

Reclamation – The process of restoring disturbed areas using any of several methods; recontouring, spreading topsoil or growth medium, seeding, and planting, among others.

Recontouring – Restoration of the natural topographic contours by reclamation measures, particularly in reference to roads.

Record of Decision (ROD) – A decision document for an Environmental Impact Statement or Supplemental EIS that publicly and officially discloses the responsible official's decision regarding the actions proposed in the Environmental Impact Statement and their implementation.

Recreation Opportunity Spectrum (ROS) Settings – A system of measuring the land's ability to meet the expectations of recreation users. Six recreation categories, from primitive (natural) to urban (highly modified) describe the activities, settings and experiences an area offers. The following categories may be found in or near the analysis area:

Urban – a highly modified environment, although the background may have natural elements. Sights and sounds of man predominate, and large numbers of users can be expected.

Rural – an area characterized by the sights and sounds of rural residential and agricultural land uses. The interaction between users is often moderate to high.

Roaded Natural – a road corridor with a landscape that is characterized as natural or natural appearing. The road has moderate to high use.

Semi-Primitive Motorized – a natural area predominantly unmodified by man. There are opportunities for isolation from the sights and sounds of man, but occasional evidence of other area users.

Recreation Visitor Day – A measurement equivalent to 1 person recreating for 12 hours or several people for a total of 12 hours.

Reserve Pit – A pit prepared on a well pad prior to drilling to use for waste water retention, evaporation and disposal. Waste waters will have a fine solids component.

Reserves – Identified resources of mineral-bearing rock from which the mineral can be extracted profitably with existing technology and under present economic conditions.

Residuum – Unconsolidated material which accumulates by weathering of parent material in place.

Resources (geologic) – Reserves plus all other mineral deposits that may eventually become available – either known deposits that are not recoverable at present, or unknown deposits, that may be inferred to exist but have not yet been discovered.

Riffle – A shallow section of stream with rapid current and a surface broken by gravel, rubble, or boulders.

Rights-of-Way (ROWs) – An accurately located strip of land with defined width, point of beginning, and point of ending. It is the area within which the user has authority to conduct operations approved or granted by the landowner in an authorizing document, such as a permit, easement, lease, license, or Memorandum of Understanding.

Riparian – Land areas which are directly influenced by water. They usually have visible vegetative or physical characteristics showing this water influence. Streamsides, lake borders, or marshes are typical riparian areas.

Riparian Ecosystem – a transition between the aquatic ecosystem and adjacent upland terrestrial ecosystem; identified by soil characteristics and distinctive vegetation communities that require free or unbounded water.

Rockfall – Rapid fall of a detached piece of bedrock from a cliff or steep slope.

Roosting – To rest or sleep in a roost. A bird will typically use the same roost over an extended period of time.

Runoff – That part of precipitation that appears in surface streams; Precipitation that is not retained on the site where it falls and is not absorbed by the soil.

Salmonidae – A family of fish that includes salmon and trout.

Salmonid Spawning Areas – Waters which provide or could provide a habitat for active self-propagating populations of salmonid fishes.

Scatter (archeological) – Random evidence of prior disturbance that is distributed about an area rather than concentrated in a single location.

Scoping – Procedures by which agencies determine the extent of analysis necessary for a proposed action, (i.e., the range of actions, alternatives, and impacts to be addressed; identification of significant issues related to a proposed action; and the depth of environmental analysis, data, and task assignments needed).

Sedge – Plants which resemble grasses but have hollow rather than woody stems.

Sediment – Soil or rock particles that have been transported to stream channels or other bodies of water. Sediment input comes from natural sources, such as soil erosion, rock weathering, agricultural practices, or construction activities.

Sediment Load – The amount of sediment (sand, silt, and fine particles) carried by a stream or river.

Sedimentary – Rock formed from fragments of pre-existing rocks (e.g. sandstone) or by precipitation from solution (e.g. limestone).

Seedling – Newly germinated plants.

Seismic – Seismic waves are shock waves or vibrations usually generated by an earthquake. In oil and gas exploration, seismic waves are generated by creating vibrations at the ground surface. These are reflected by the various layers of rock beneath the ground and measured at the surface. Computer analysis enables a cross-section of the rock layers to be constructed thus revealing potential mineral deposits.

Sensitive Species – Those species of plants or animals that have appeared in the Federal Register as proposed for classification and are under consideration for official listing as endangered or threatened species under the Endangered Species Act. This also includes species that are on an official state list or are recognized by the Land Manager as needing special management to prevent their being placed on federal or state lists.

Sensitivity Level – a particular degree or measure of viewer interest in the scenic qualities of the landscape.

Sensitivity Level 1 – The highest sensitivity level, referring to areas seen from travel routes and use areas with moderate to high use.

Sensitivity Level 2 – An average sensitivity level, referring to areas seen from travel routes and use areas with low to moderate use.

Sensitivity Level 3 – The lowest sensitivity level, referring to areas seen from travel routes and use with low use.

Short-Term Impacts – For the purpose of this EIS analysis, short-term impacts are generally defined as those that would occur during the construction period.

Shut In – Refers to a well that is completed, is shown to be capable of production in paying quantities, and is not presently being operated.

Significant – As used in NEPA determination of significance requires consideration of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole, and the affected region, interests, and locality. Intensity refers to the severity of impacts (40 CFR 1508.27).

Slump – Slide or earthflow of a soil mass.

Soil – Loose, unconsolidated surface material comprising topsoil and subsoil.

Spawning – The deposition of eggs and sperm by fish.

Species – Organisms that successfully reproduce among themselves and cannot reproduce successfully with other organisms.

Species of Special Concern – A native species whose population is low and limited in distribution or has suffered significant reductions because of habitat loss.

Specific Conductance (umhos/cm) – A measure of electrical conductivity in water that is influenced by the mineral content of the water.

Stiff Diagram – a graphic technique to display the relative concentrations of the major constituents of water.

STORET Sites – Water sampling locations for which data has been stored in the EPA database STORET.

Stormwater Runoff – Overland runoff from snowmelt or a precipitation event.

Strata – An identifiable layer of bedrock or sediment; does not imply a particular thickness of rock.

Strip topsoil – To salvage a specific depth of topsoil with a scraper, dozer, or grader for use in future revegetation of the site.

Substrate – Material consisting of silts, sands, gravels, boulder and woody debris found on the bottom of a stream channel.

Talus – An aggregation of fallen loose rock which forms at the base of a steep slope.

Target formation – The geological association of rocks which contain the exploitable mineral reserves.

Telemetry – Instrumentation to transmit scientific equipment readings from remote locations to a central site.

Prevention of Significant Deterioration (PSD) – A regulatory program under the Clean Air Act (P.L. 84-159, as amended) to limit air quality degradation in areas currently achieving the National Ambient Air Quality Standards. The PSD program established air quality classes in which differing amounts of additional air pollution is allowed above a legally defined baseline level. Almost any additional air pollution would be considered significant in PSD Class I areas (certain large National Parks and Wilderness Areas in existence on August 7, 1977). PSD Class II areas allow that deterioration associated with moderate, well-controlled growth (most of the country). Although Class III areas would generally allow planned individual growth, no Class III areas have been established.

Temperature Inversion – A local weather condition in which relatively cold air near the earth's surface is trapped below a layer of relatively warm air aloft. This condition is the reverse of the normal air temperature gradient and traps polluted air within the cold surface layer.

Threatened Species – Any species of animal or plant which is likely to become endangered within the foreseeable future throughout all or significant portions of its range. It has been designated in the Federal Register by the Secretary of the Interior as a threatened species.

Disturbance of the habitat of threatened species is prohibited by the Endangered Species Act of 1973, as amended.

Thrust Faulting – Low angle fracturing of bedrock in response to horizontal stress within the earth's crust.

Total Dissolved Solids (TDS) – Total amount of dissolved material, organic or inorganic, contained in a sample of water.

Total Suspended Solids (TSS) – Amount of undissolved particles suspended in liquid.

Track Excavator – A large backhoe type excavating machine which is self-propelled on caterpillar-type tracks.

Transmission pipeline – A pipeline larger than gathering or collection pipelines, typically larger than 10 inches diameter, for transporting oil or natural gas over long distances.

Transmissivity – The rate at which water is transmitted through a unit width of a groundwater aquifer or confining bed under a unit hydraulic gradient.

Trilinear Diagram – A method graphically plotting the chemical composition of the major anions and cations of a water sample in a multi-coordinate field.

Trip a Drill String – Removal of the drill bit and its associated piping.

Turbidity – A fisheries measurement of the total suspended solids in water expressed as nephelometric turbidity units (NTU).

Two-Phase Separator – A basin which accommodates the separation of different density fluids, in this case gas and produced water.

Typic Cryoboralfs – A soil which has developed in a cold, relatively moist climatic regime and has a subsurface horizon with clay accumulation.

Understory – The trees and other woody species growing under a more-or-less continuous cover of branches and foliage formed collectively by the upper portion of adjacent trees and other woody growth.

Variety Class – a particular level of visual variety or diversity of landscape character. There are three variety classes: A, B, and C.

Variety Class A – distinctive

Variety Class B – common

Variety Class C – minimal

Vegetation – All of the plants growing in and characterizing a specific area or region; the combination of different plant communities found there.

Visual Resource – The composite of basic terrain, geologic features, water features, vegetation patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for viewers.

Visual Resource Management System – The BLM system for evaluating and classifying visual resources. The system uses line, form, color, texture, scale and space to categorize lands into one of four classes.

Water Quality – refers to a set of chemical, physical, or biological characteristics that describe the condition of a river, stream, or lake. The quality of water determines which beneficial uses it can support. Different instream conditions or levels of water quality are needed to support different beneficial uses.

Waters of the United States – A jurisdictional term from Section 404 of the Clean Water Act referring to water bodies such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce.

Watershed – All of the land that drains surface water to a given stream above a designated point (usually its mouth); also called a stream drainage or drainage basin.

Well Head – The equipment used to maintain surface control of a well. It is composed of the casing head, tubing head and a series of valves and fittings.

Well Pad – A level area constructed for the purpose of drilling a well.

Wetlands – Areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Winter Range – The place where migratory (and sometimes nonmigratory) animals congregate during the winter season.

Workover – Well maintenance activities which require onsite mobilization of a drill rig to repair the well bore equipment (casing, tubing, rods, or pumps) or the wellhead. In some cases, a workover may involve development activities to improve production from the target formation.

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